

Congestion Management Process Implementation

March 2022

Contents

List of Figures	3
List of Tables	3
1. Document the progress of each strategy	4
1.1 Land use and development.....	4
1.2 Make alternatives to driving alone possible, convenient, and appealing	6
1.2.1 Transportation demand management.....	6
1.2.2 Transit operations and infrastructure.....	6
1.2.3 Walking and bicycling operations and infrastructure.....	7
1.3 Roadway operations	11
2. Change, eliminate, or add strategies	13
2.1 Land use and development.....	13
2.2 Make alternatives to driving alone possible, convenient, and appealing	13
2.2.1 Transportation demand management.....	13
2.2.2 Transit operations and infrastructure.....	13
2.2.3 Walking and bicycling operations and infrastructure.....	13
2.3 Roadway operations	13
3. Showcase successes and identify missed opportunities.....	13
4. Assess the impact of strategies and monitor regional traffic congestion trends.....	13
4.1 Impact of strategies	13
4.2 Regional traffic congestion trends	14
5. Review the balance of traffic congestion management strategies with other transportation goals.	18
6. Actions	18
Appendix	20
Botetourt County	20
City of Roanoke	22
Roanoke County.....	22
City of Salem	23
Town of Vinton.....	24

List of Figures

Figure 1. Percent of the congestion network that is congested during peak and off-peak hours	15
Figure 2. Traffic congestion on priority corridors	16
Figure 3. Traffic congestion on corridors of concern	17

List of Tables

Table 1. Land use/development strategies to manage traffic congestion	4
Table 2. Sources reviewed for evaluating progress of land use strategies to manage traffic congestion ...	5
Table 3. Transportation demand management strategies to reduce automobile trips	6
Table 4. Transit strategies to reduce automobile trips on priority corridors	7
Table 5. Pedestrian strategies to reduce automobile trips on priority corridors	7
Table 6. Bicycling strategies to reduce automobile trips on priority corridors	10
Table 7. Roadway operations strategies to manage traffic congestion	11
Table 8. Land use policies, practices, recommendations, and actions from plans and studies that affect transportation	24

The Traffic Congestion Management Process adopted by the Roanoke Valley Transportation Planning Organization in 2020 states that RVARC will produce an annual Traffic Congestion Management Process report to:

**RVTPO Congestion Goal:
The Roanoke Valley does not have much severe traffic congestion and the RVTPO wants to keep it that way!**

- Document the progress of each strategy, monitoring the effects of strategies on traffic congestion,
- Justify changing, eliminating, or adding strategies,
- Showcase successes and identify missed opportunities,
- Assess the impact of strategies on traffic congestion and monitor regional traffic congestion trends, and
- Review the balance of traffic congestion management strategies with other transportation goals.

The congestion management strategies are intended to prevent or minimize increases in traffic congestion, meeting three objectives:

1. Maintain the RVTPO’s acceptable driving times, even as population increases over the next ten years (through 2030).
2. Reduce land use/development practices that promote solely single-occupant vehicle trips and increase land use/development practices that promote mixed land uses and multimodal trips.
3. Increase the number of people using alternate transportation options for access to work.

The strategies outlined in the Congestion Management Process include metrics that may not directly measure progress toward these three objectives but can be used to indirectly assess the region’s trajectory. Progress may take several years to assess, for example, commute mode is typically determined in the Census.

1. Document the progress of each strategy

To prevent and manage traffic congestion, the Traffic Congestion Management Process identified strategies on land use and development, strategies to make alternatives to driving alone possible, convenient, and appealing, and strategies to improve roadway operations.

1.1 Land use and development

Land use and development strategies to manage traffic congestion focus on a greater mix of uses and higher densities, especially within Urban Development Areas/Designated Growth Areas, through land use maps and plans, subdivision and zoning ordinances and development approval practices, education of developers and communities, encouragement, and research.

Table 1. Land use/development strategies to manage traffic congestion

Strategy	Progress
Update Future Land Use Maps and Plans to incorporate greater mixes of uses and higher densities, especially within Urban Development Areas/Designated Growth Areas	Not assessed

Strategy	Progress
Update Subdivision and Zoning Ordinances and Development Approval Practices to implement desired land use/development practices during development review.	Not assessed
Educate developers about desired land uses and development practices	No progress
Educate the community about the benefits of desired land uses and development practices	No progress
Encourage developers to submit creative proposals.	No progress
Solicit input from developers on how to promote desired land uses	No progress
Research locality policies and ordinance language that achieve desired land uses	See Appendix
Document examples of new land uses and developments in the RVTPO region that are consistent or inconsistent with desired land use/development practices	No progress

RVARC staff gathered and reviewed locality plans and documents relevant to the land use strategies identified in the Traffic Congestion Management Process. When selecting which sources to review, the year of the source was considered and its relevance to land use and transportation (Table 2). Of the sources reviewed, it was encouraging to note that nearly all policies, practices, recommendations, and actions identified are likely to promote desired land uses and discourage undesired land uses (see Appendix).

Table 2. Sources reviewed for evaluating progress of land use strategies to manage traffic congestion

Source reviewed	Locality	Year
Code of Ordinances	Botetourt	
Map 4: Urban Development Areas	Botetourt	
Map 9: Future Land Use 2011	Botetourt	2011
Gateway Area Crossing Plan 2016	Botetourt	2016
Botetourt Transportation 2017	Botetourt	2017
City Plan 2040: Livable Built Environment - City Design - Land Use	City of Roanoke	2020
Future Land Use Guide	Roanoke County	Ongoing
Future Land Use Map	Roanoke County	Ongoing
Oak Grove Center Plan	Roanoke County	2021
Hollins Center Plan	Roanoke County	2020
419 Town Center Plan	Roanoke County	2019
Future Land Use	Salem	2012
Pride and Progress Planning for Excellence: Land Use and Community Appearance	Salem	2012
Downtown Plan	Salem	2016
Gus Nicks Boulevard/Washington Avenue Corridor Improvement Study	Vinton	2019
Vinton Zoning Revisions Framework	Vinton	2018
Urban Development Areas	Vinton	2016

1.2 Make alternatives to driving alone possible, convenient, and appealing

Strategies to make alternatives to driving alone possible, convenient, and appealing include transportation demand management, transit operations and infrastructure, and walking and bicycling operations and infrastructure.

1.2.1 Transportation demand management

RIDE Solutions is the region’s transportation demand management program staffed by the Regional Commission. The number of citizen members in the RIDE Solutions database is a measure of effectiveness for several transportation demand strategies and reflects RIDE Solutions’ outreach and awareness. In 2020-2021, 600 new members were added.

Table 3. Transportation demand management strategies to reduce automobile trips

Strategy	Progress
Targeted outreach to businesses to promote multimodal transportation to access work and for mid-day trips	<p>RIDE Solutions contacted seven businesses between July 2021 and October 2022:</p> <ul style="list-style-type: none"> • Salem VA Center (initiated vanpool service on August 27, 2022) • Voyant Beauty • Build Smart Institute • Botetourt County • Roanoke County • Carilion Clinic <p>RIDE Solutions hosted a vanpool webinar on 7/13/2021.</p>
Targeted advertising to businesses to institute telework policies	RIDE Solutions hosted a telework webinar on 9/22/2020.
Targeted advertising to commuters using geofencing	RIDE Solutions signed an agreement with Siddall on 2/22/2022 to assist with marketing strategies to maximize the reach of target areas; geofencing may be one tool.
Increase RIDE Solutions marketing budget	No progress
Alternatives to priority corridor routing for driving and biking	<p>Created and promoted 29 self-guided bike tours. Roanoke Roasts features alternatives to priority corridor Route 419/U.S. 220 and Historic Churches – Roanoke Valley Loop features alternatives to Route 419/U.S. 220 and Main Street priority corridors.</p> <p>https://ridesolutions.org/self-guided-tours/</p>

1.2.2 Transit operations and infrastructure

Adding service and providing information are transit strategies from the Valley Metro Transit Development Plan that help manage congestion. A major improvement in transit service not identified in the Traffic Congestion Management Process is the construction of a new transit center, the 3rd Street Station. This new facility will alleviate adverse conditions present in Campbell Court such as crowded bus lanes, narrow and crowded passenger platforms, and delays in getting buses on their routes through downtown traffic. This will contribute toward a more appealing and reliable transit system overall which

could, combined with the strategies outlined in the Traffic Congestion Management Process, reduce congestion on priority corridors.

Table 4. Transit strategies to reduce automobile trips on priority corridors

Strategy	Progress
Add transit service along Route 419 between Tanglewood Mall and the Salem VA Medical Center	Conversations between Valley Metro and Roanoke County are in progress.
Extension of Routes #91/#92 to the Glenvar area and add a new route to replace the current Routes #91/#92 connection between Downtown Salem and the medical centers.	Conversations between Valley Metro, Salem, and Roanoke College are in progress.
Maintaining updated route and schedule publications	Valley Metro hired a Director of Planning and Special Projects in November 2019 to assist with updating route and schedule publications.
Implement real-time passenger information	Valley Metro Go! (VMGO) provides real time bus stop departure information for the Smart Way, Smart Way Express, and Star Line Trolley. All Valley Metro services will have VMGO by Summer 2022.

1.2.3 Walking and bicycling operations and infrastructure

Pedestrian strategies to reduce automobile trips on priority corridors that help manage traffic congestion focus on pedestrian crossings and sidewalks.

<https://smartportal.virginiahb2.org/#/public/apps>

Table 5. Pedestrian strategies to reduce automobile trips on priority corridors

Congestion Reduction Strategy	Project	Status
Build streetscapes on Orange Avenue and improved crossings at select intersections	Route 460 (Orange Ave) Improvements at King Street: Crosswalks are being added at the Intersection of Orange Ave. and King Street	Funded
	Route 460 (Orange Ave) Improvements near Blue Hills Drive: Crosswalks are being added at the intersection of Orange Ave. and Blue Hills Drive.	Funded
	Orange Avenue Improvements: Pedestrian signals, push buttons and marked crosswalks with curb ramps will be provided at 13th St & Gus Nicks Blvd. signalized intersections.	Project submitted for funding but was not funded. Other projects and funding options are being considered.
Add sidewalks on both sides of U.S. 460 east of Gus Nicks	No projects submitted in 2021 or known to be in the works for grant submission as of February, 2022.	No progress

Congestion Reduction Strategy	Project	Status
Blvd. to Cloverdale Rd. (Alt. 220)		
Improve pedestrian crossings at signalized intersections near Tanglewood	Route 419 Widening, Safety, and Multimodal Improvements: West sidewalk from 0.26 miles from Route 867 to South Peak Blvd and east sidewalk from 0.60 miles from Route 867 to the Route 220 interchange on-ramp. Crosswalks with pedestrian signals will be added at three existing signalized Route 419 intersections: Route 867, Route 706, and South Peak Blvd.	Completed
	Route 419 Streetscape Improvements, Ogden Road to Starkey Road: Mainline pedestrian crossing phased with the side street left turns. Refuge island in the center of the intersection.	Funded
	Route 419 and Route 220 Diverging Diamond Interchange: Pedestrian actuated buttons and countdown timers at ramp intersections, continental style crosswalks.	Funded
Add sidewalks on Franklin Rd. from Willow Oak to west city limit and improve crossings at select intersections	Franklin Rd Sidewalk Improvements from 3100 block to Rt. 220: Continuous sidewalk along the west side. High visibility crosswalks and pedestrian refuge islands.	Funded, although as of February 2022, bids came back too high to award a contract.
Add sidewalks on U.S. 220 from Route 419 to Old Rocky Mount Rd.	Route 220 Corridor Intersection Improvements: Crosswalks at U.S. 220 and Valley Ave/Southern Hills Dr; U.S. 220 and Crossbow Cir/Pheasant Ridge Rd	Funded
Add sidewalks on both sides of Wildwood Rd. from Main St. to I-81	No projects submitted	No progress
Build a streetscape on Main St. from Thompson Memorial Ave. to 4th St.	Downtown Salem - Main Street, Union Street to Broad Street: Replace and widen sidewalks, shorten crossings, improve crosswalks, install streetscaping and new lighting as proposed in Salem's Downtown Plan.	Funded
	Downtown Salem - Market Street Intersection Improvements: Widen sidewalk, add three bump-outs, improve crosswalks to ADA standards, lighting.	Funded
Fill in sidewalk gaps (Mitchell Road to near Bypass Road), construct a midblock crossing, and complete the greenway	Route 24 Bike/Pedestrian Plan	Plan in progress

Congestion Reduction Strategy	Project	Status
connection on Washington Ave.		
Adjust development processes to build sidewalks with any new development proposal in multimodal centers and districts and UDAs/DGAs		No progress

Table 6. Bicycling strategies to reduce automobile trips on priority corridors

Strategies	Project	Progress
Add bicycle accommodations to U.S. 460 corridor (East Roanoke City Limit to West Roanoke City Limit)	No projects submitted	No progress
Add bicycle accommodations on King St. (U.S. 460 to Gus Nicks Blvd.)	No projects submitted	No progress
Add bicycle accommodations on Route 419 (Franklin Rd. to Starkey Rd.)	Route 419 Widening, Safety, and Multimodal Improvements: Bike lanes added to Route 419 from Route 867 to Route 220	Completed
	Route 419 Streetscape Improvements, Phase 2: Bike lanes on both sides of 419 from Ogden Road to Starkey Road	Funded
	Route 419 and Route 220 Diverging Diamond Interchange	Funded
Add bicycle accommodations on U.S. 220 (Route 419 to Blue Ridge Parkway)	No projects submitted	No progress
Add bicycle accommodations on Gus Nicks Blvd. (U.S. 460 to Washington Ave.)	Route 24 Bike/Pedestrian Plan	Plan in progress
Connect the Tinker Creek and Lick Run Greenways	Installation of Pedestrian Countdown Signal will to improve the safety of pedestrians crossing the intersection of Orange Avenue, Gainsboro Road, and the Lick Run Greenway	Funded
Complete the Murray Run Greenway to connect to Ogden Road, Tanglewood Mall, and Green Valley Elementary School	No projects submitted	No progress
Complete the Roanoke River Greenway from Mill Lane to Tinker Creek	Aerial Way to Bridge Street	Under construction
	Underhill Avenue bypass	Right-of-way negotiations in progress
	Green Hill Park to Riverside	Design and right-of-way acquisition in progress
Connections to Greenways in Salem (#2, #3, #12 from the Greenway Plan)	No projects submitted	No progress
Connections to Greenways near I-81 (#15, #16, #52 from the Greenway Plan)	Hanging Rock extension to Main Street	Funded
	Hanging Rock connection Park-and-Ride	Complete

Strategies	Project	Progress
Connection to Greenway near Gus Nicks Blvd./Washington Ave. (#37 from the Greenway Plan)	Route 24 Bike/Pedestrian Plan	Midblock crossing at Gus Nicks Blvd funded.

1.3 Roadway operations

Table 7. Roadway operations strategies to manage traffic congestion

Strategy	Project	Progress
Construct “Route 419 Streetscape Improvements, Phase 2” including signal modifications to eliminate turning movements at intersections on Electric Rd. and Ogden Rd.	Diverging Diamond Interchange will implement through cuts on Route 419 between U.S. 220 and Ogden Road	Funded
	Route 460 (Orange Ave) Improvements near Blue Hills Drive	Funded
	Route 460 and Alt. Route 220 Intersection Improvements	Funded
	Orange Avenue Improvements	Submitted for SMART SCALE funding (unfunded)
	Route 460 (Orange Ave) Improvements Seibel Dr/Hickory Woods	Funded
	Route 460 (Orange Ave) Improvements at King Street	Funded
	Route 460 Intersections from Carson Rd. to Huntridge Rd.	Funded
Construct access restrictions, new/longer turn lanes, signal timing updates, and geometric improvements per Route 460 Operational Improvements Study on Orange Avenue from Williamson Road to Alternate U.S. 220. (Seven projects submitted for SMART SCALE Round 4 funding)	Route 460 at West Ruritan Road Intersection Improvements	Funded
Identify preferred alternate routing to I-81 through the Roanoke Valley and study operational and wayfinding improvements needed		No progress
Conduct a study of Intelligent Transportation System (ITS) infrastructure needs for priority corridors in the Roanoke Valley		No progress

Strategy	Project	Progress
Conduct a business survey to better understand freight operation needs in the Roanoke Valley		No progress
Conduct a regional freight study for the Roanoke Valley and develop a plan to address needs		No progress
Provide more truck parking in the region		No progress

2. Change, eliminate, or add strategies

2.1 Land use and development

No changes to land use and development strategies.

2.2 Make alternatives to driving alone possible, convenient, and appealing

2.2.1 Transportation demand management

Remove “mode shift” as a metric because of lack of data.

Change “Targeted advertising to commuters using geofencing” to “Brand awareness through targeted advertising to commuters”.

Add “Build awareness of the RIDE Solutions app”, “Increase rewards through the RIDE Solutions app”, and “Engage members” to increase membership and engage and retain members.

2.2.2 Transit operations and infrastructure

No changes to transit operations and infrastructure strategies.

2.2.3 Walking and bicycling operations and infrastructure

No changes to walking and bicycling operations and infrastructure.

2.3 Roadway operations

The study that OIPI and VDOT are doing on Route 11/460 – West Main Street as part of the project pipeline initiative may recommend strategies to address congestion relevant to the Main St priority corridor for congestion management which should be evaluated in future versions of this report.

3. Showcase successes and identify missed opportunities

Showcasing successes and identifying missed opportunities helps stakeholders understand the implementation of congestion management strategies. It may be more palatable and effective for stakeholders to identify the region’s successes and missed opportunities than for RVARC staff to make those judgments. No work has been done yet on this assessment.

4. Assess the impact of strategies and monitor regional traffic congestion trends

4.1 Impact of strategies

Ideally, before and after measurements on the relevant corridors would help us understand how well individual strategies worked to reduce traffic congestion. However, lack of data, the influence of other variables, and the resources to analyze data make it difficult to assess the impact of individual strategies on traffic congestion.

Tools and resources are being developed and refined, particularly since mobile devices became ubiquitous. RVARC staff continue to seek training and access to resources. VDOT and DRPT are important partners in providing training and access to resources. National trends can be extrapolated to the region.

4.2 Regional traffic congestion trends

Probe Data Analytics Suite was used to get the average weekday hourly planning time index for the entire congestion network. The percent of the congestion network that had a planning time index of 3.0 or greater during peak hours or 2.5 or greater during off-peak hours was calculated.

The RVTPO has defined the acceptable level of congestion as less than 3% of the congestion network with planning time index greater than 3 during peak hours or greater than 2.5 during off-peak hours. (The congestion network consists of those roads for which data is available to generate a planning time index.) In 2020, the RVTPO congestion network operated at acceptable congestion levels (Figure 1 **Error! Reference source not found.**). The percent of miles of the congestion network experiencing traffic congestion during peak and off-peak hours was lower in 2019 and 2020 than in 2018.

The Traffic Congestion Management Process identified five priority corridors for congestion management. Of these five, one corridor, Gus Nicks Boulevard/Washington Avenue, is not on the congestion network, which means that data is not available to generate a planning time index. On all four of the priority corridors with available data, the number of miles with an average planning time index greater than 3.0 during peak hours remained the same or decreased in 2020 (Figure 2 **Error! Reference source not found.**). The number of miles with an average planning time index greater than 2.5 during off-peak hours remained the same or decreased in 2020 for all but one priority corridor. During off-peak hours, the segment of I-18 from Exit 140 to Exit 146 experienced average planning time index greater than 2.5 for two miles (each direction is counted separately) in 2020, an increase from zero miles in 2019 and 2018. This increase was probably related to construction activity.

The Traffic Congestion Management Process also identified corridors of concern for traffic congestion. Data is available for 14 of the 18 segments, five of which had an average planning time index greater than 3.0 during peak or 2.5 during off-peak in 2020 (Figure 3). The number of miles with an average planning time index greater than 3.0 during peak hours or 2.5 during off-peak hours remained the same or decreased in 2020.

Regional traffic congestion is influenced by many variables. The COVID pandemic in 2020 dramatically altered traffic patterns. The completion of projects to address traffic congestion such as the Exit 140 Park and Ride, the Exit 150 roundabout, and the Elm Avenue interchange may have contributed to the reduction in traffic congestion observed in 2019. Long-term trends will be valuable in understanding the success of strategies in avoiding much severe traffic congestion even as Roanoke's population and economy grow.

Figure 1. Percent of the congestion network that is congested during peak and off-peak hours

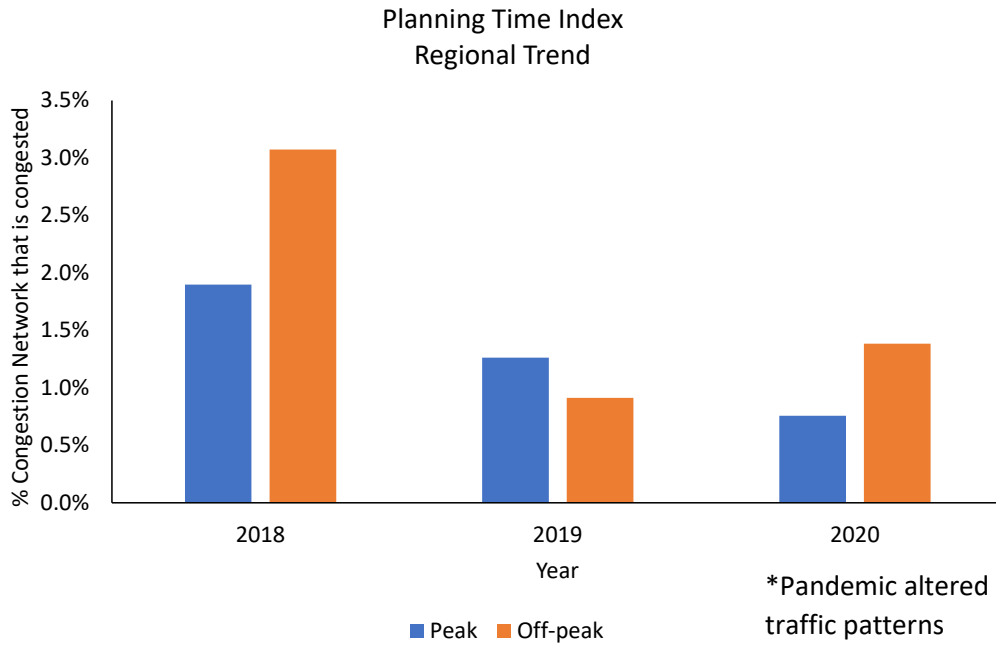


Figure 2. Traffic congestion on priority corridors

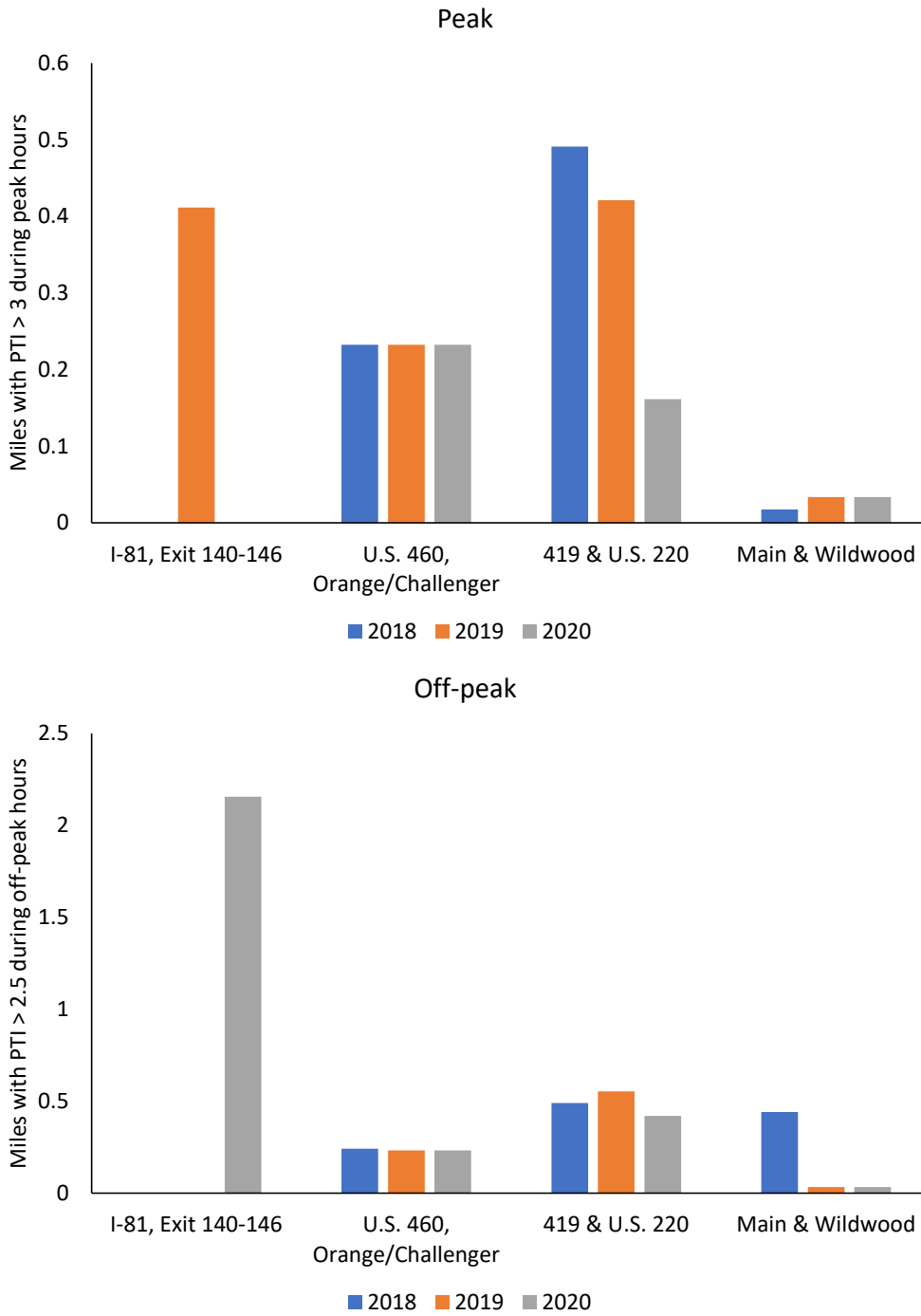
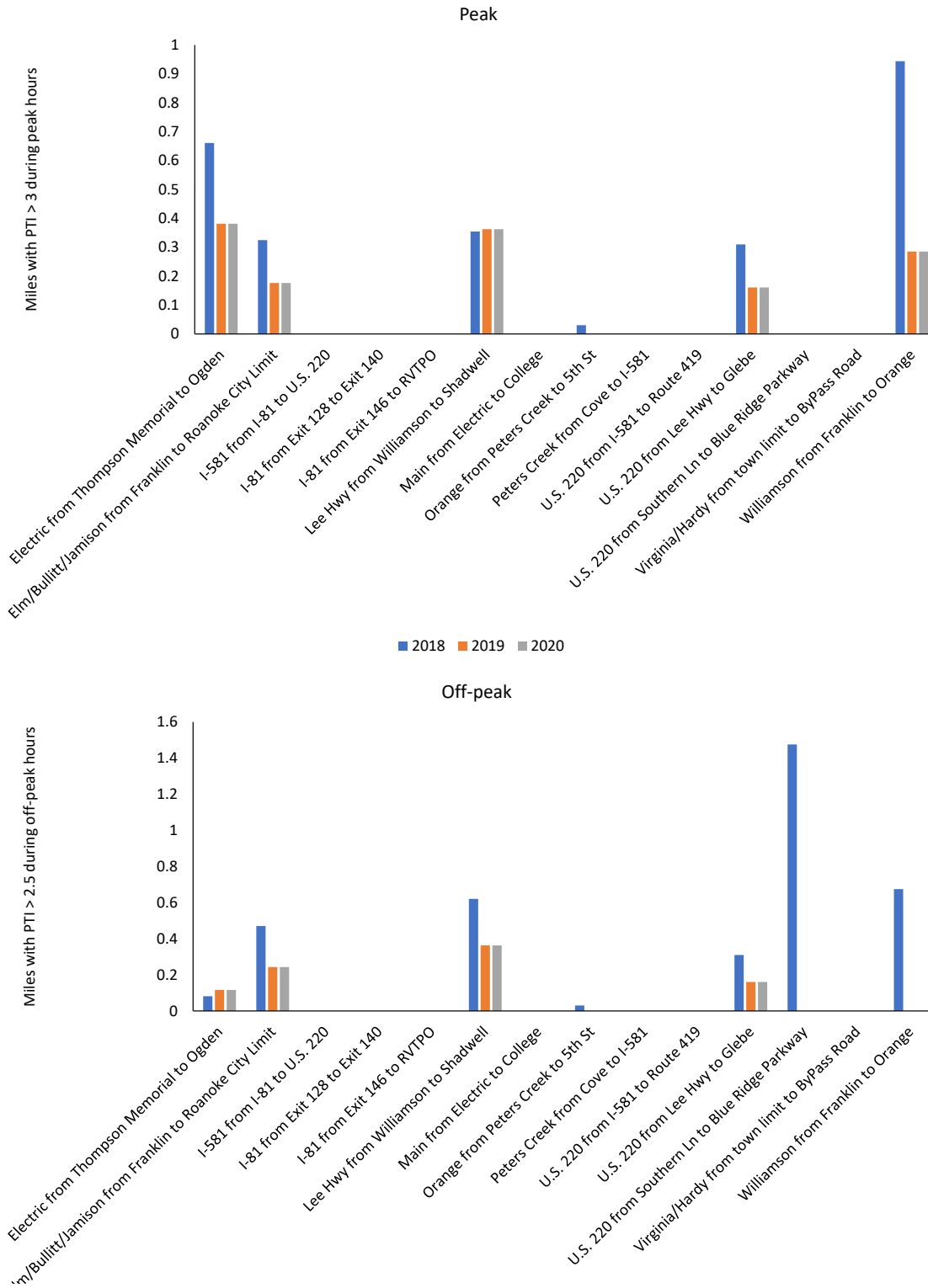


Figure 3. Traffic congestion on corridors of concern



5. Review the balance of traffic congestion management strategies with other transportation goals

A criticism of traffic congestion management is that when it is prioritized above other transportation goals it yields a transportation system that moves vehicles very well but has detrimental effects on safety, environment, economy, equity, access, and is expensive to maintain. Therefore, the annual review of the Roanoke Valley's traffic congestion management activities should consider how traffic congestion management strategies interact with other transportation goals.

In many situations, strategies may promote more than one transportation goal. For example, a lane reconfiguration may both improve safety and reduce traffic congestion. But in other situations, it may be necessary to choose, for example to allocate funds to a safety treatment rather than congestion management.

The RVTPO is currently updating the Roanoke Valley Transportation Plan. This update considers how to balance transportation goals.

6. Actions

Action items for future work programs to manage traffic congestion as part of this ongoing process include:

- Continue to build an inventory of locality policies and ordinance languages that achieve desired land uses.
- Collect input through surveys and interviews
 - A survey that invites localities to identify:
 - Their own and others' successes and missed opportunities.
 - Opportunities to educate developers about desired land users and development practices
 - Obstacles to educating developers about desired land users and development practices
 - Opportunities to encourage developers to submit creative proposals
 - Obstacles to encouraging developers to submit creative proposals
 - Opportunities to educate the community about the benefits of desired land users and development practices
 - Obstacles to educating the community about the benefits of desired land users and development practices
 - A survey of businesses to better understand freight operation needs in the Roanoke Valley.
 - Interview three to five developers on how to promote desired land uses.
 - Input from stakeholders on the balance of traffic congestion management strategies with other transportation goals, to further refine this balance and understand the practical implications.
- Conduct studies (may include a consultant) to study:

- Preferred alternate routing to I-81 through the Roanoke Valley and operational and wayfinding improvements needed
- Intelligent Transportation System (ITS) infrastructure needs for priority corridors in the Roanoke Valley
- A regional freight study for the Roanoke Valley and a plan to address needs
- Recommendations on how to provide more truck parking in the region.
- RVARC staff will continue to stay abreast of developments in measuring and analyzing the impacts of strategies on traffic congestion.

Appendix

RVARC staff reviewed land use policies, practices, recommendations, and actions from plans and studies that affect transportation. Some documents had many discrete items to consider and others had few, so the number of items relevant to each locality and identified from each document varies. Furthermore, the relative importance or impact of each item is highly variable. Therefore, the number of items identified should not be interpreted as a value judgment of how well a document or a locality is contributing to congestion management.

Botetourt County

RVARC staff reviewed Botetourt’s Code of Ordinances, Urban Development Areas, Future Land Use, the Gateway Area Crossing Plan, and the Transportation section of the Comprehensive Plan.

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Prepare Gateway Crossing Access Plan.	Gateway Crossing Area Plan (Goal 2)	Yes
Consider acquisition of VDOT Park & Ride property on US Route 220 North for future commercial development and a shared Park & Ride facility.	Gateway Crossing Area Plan (Goal 4)	Yes
Encourage the introduction of higher density housing options (e.g., apartments, townhomes, condominiums) as part of any development in this area.	Gateway Crossing Area Plan (Goal 5)	Yes
Consider the creation of an Exit 150 overlay zone to allow more integrated mixed-use development in the study area.	Gateway Crossing Area Plan (Goal 5)	Yes
Draft a new mixed-use zoning classification that specifically addresses the need for a higher density development in areas designated as urban growth districts (UGD) and designate this area as a UGD.	Gateway Crossing Area Plan (Goal 5)	Yes
Make streetscape improvements on US Route 11 south of Cloverdale Road to improve aesthetics and pedestrian amenities.	Gateway Crossing Area Plan (Goal 6)	Yes
Further develop the streetscape edge conditions with signage, wayfinding, lighting and landscaping strategies presented on the conceptual land use plan and conceptual sections to create a study-wide program to guide future development.	Gateway Crossing Area Plan (Goal 6)	Yes

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Make streetscape improvements on the eastern segment of Alt. Route 220 from the new signalized intersection to Common Parkway at First Citizens Bank.	Gateway Crossing Area Plan (Goal 6)	Yes
Map 4: Urban Development Areas designates Gateway Crossing and Daleville Town Center as UDAS.	Comprehensive Plan Maps	Yes
Map 9: Future Land Use shows projected future land use, has not been updated since last full Comp Plan Rewrite, prioritizes development inside urban boundary, around towns.	Comprehensive Plan Maps	Yes
The zoning code allows for Traditional Neighborhood Developments and Planned Unit Developments.	Zoning Code (Code of Ordinances, Chapter 25)	Somewhat: Currently no overlay districts exist. This is a use-based, not form-based code. Rezoning are made on a case-by-case basis and no administrative rezonings have been made since the mixed use designations were adopted.
Encourage town design principles in UDAS.	Botetourt Transportation 2017 (Strategy p 19)	Yes
Ensure land uses decisions contribute to the Gateway Area Crossing Plan vision.	Botetourt Transportation 2017 (Strategy p 20)	Yes
Update parking standards.	Botetourt Transportation 2017 (Strategy p 22)	Yes

City of Roanoke

RVARC staff reviewed the Land Use section of City Plan 2040. Reviewing future land use maps and ordinances is a future task.

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Maximum residential lot sizes.	City Plan 2040 - City Design - Land Use (Priority: Complete Neighborhoods, Policy 1)	Yes
Neighborhood center in every neighborhood.	City Plan 2040 - City Design - Land Use (Priority: Complete Neighborhoods, Policy 2)	Yes
Building placement that de-emphasizes parking; Real estate tax structure, zoning regulations, and incentives.	City Plan 2040 - City Design - Land Use (Priority: Design for Permanence, Priority 1)	Yes
A two-tiered real estate tax system to encourage productive uses of land by shifting the focus of taxation away from buildings and emphasizing taxation of the land value.	City Plan 2040 - City Design - Land Use (Priority: Purposeful Land Use, Priority 2)	Yes

Roanoke County

RVARC staff reviewed Roanoke County’s Future Land Use Guide and Map and three Center Plans, Oak Grove, Hollins, and 419 Town Center. Roanoke County is currently updating its Comprehensive Plan and this can be incorporated into a future report. Roanoke County planning staff regularly review documents for consistency with desired land uses.

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
These plans emphasize centers of mixed use with shared parking, pedestrian and bike prioritization within the center, and transit access. Implementation includes infrastructure, development, zoning.	419 Town Center Plan	Yes
	Oak Grove Center Plan	Yes
	Hollins Center Plan	Yes
Identify areas for future development and encourage cluster development and alternative transportation	Roanoke County Future Land Use Map/Future Land Use Guide	Somewhat: Likely to be updated/being update during Comprehensive Plan Update

City of Salem

RVARC staff reviewed Salem’s Future Land Use and the land use section of the comprehensive plan (“Pride and Progress Planning for Excellence”). Reviewing ordinances is a future task.

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Install bicycle infrastructure such as bicycle racks at strategic locations downtown such as the Salem Public Library, Farmers Market, and City Hall.	Downtown Plan (Goal: Encourage Alternative Transportation)	Yes
Consider other options for travel in downtown, such as shuttle and bicycle carts.	Downtown Plan (Goal: Encourage Alternative Transportation)	Yes
Encourage institutions and businesses to provide bicycle infrastructure, and encourage alternative transportation.	Downtown Plan (Goal: Encourage Alternative Transportation)	Yes
Install bus shelters at key locations.	Downtown Plan (Goal: Improve Transit Access in Downtown)	Yes
Link downtown directly with the Roanoke River Greenway, the Elizabeth Campus Walking Trail, and the Mason Creek Greenway/Hanging Rock Battlefield Trail through connections along East Main Street and Union Street.	Downtown Plan (Goal: Emphasize Walkability and Connectivity)	Yes
Link surrounding neighborhoods with downtown through sidewalks, bike lanes, and trails, where appropriate.	Downtown Plan (Goal: Increase Walkability from Adjacent Neighborhoods)	Yes
Improve pedestrian accommodations at key intersections.	Downtown Plan (Goal: Increase Walkability from Adjacent Neighborhoods)	Yes
Use Residential Development to add Buildings to Secondary Streets such as Clay Street and Calhoun Street.	Downtown Plan (Goal: Allow new residential construction on Clay Street and Calhoun Street, etc.)	Yes
Work with Roanoke College to add new in-fill development to Clay Street, with first-floor commercial and upper-floor dormitory or offices.	Downtown Plan (Goal: Allow new residential construction on Clay Street and Calhoun Street, etc.)	Yes
Extend the Downtown Business District zoning into additional areas.	Downtown Plan (Goal: Expand the Footprint of Downtown)	Yes

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Develop an Overlay or Corridor Plan for Main Street and other placemaking streets which regulates the built form of redevelopment and future development. Carefully consider key properties.	Downtown Plan (Goal: Expand the Footprint of Downtown)	Yes
Strategy: Consider using tree heights and placement in order to encourage sidewalk traffic.	Downtown Plan (Strategies Table, Phase 1 #131)	Yes
Strategy: Evaluate Turn Movements on Main Street.	Downtown Plan (Strategies Table, Phase 1 #146)	Yes
Strategy: Update the Future Land Use Plan for the Downtown area.	Downtown Plan (Strategies Table, Phase 2 #208)	Yes
Strategy: Consider improving some alleys in downtown into “Shared Streets”, with accommodations for pedestrians as well as vehicles.	Downtown Plan (Strategies Table, Phase 2 #235)	Yes
Strategy: Evaluate the usefulness of a parking garage in downtown. Consider other institutional partners.	Pride and Progress Planning for Excellence: Land Use and Community Appearance (Expand the Downtown Business District)	No
Future Land Use Map	Salem Future Land Use Map	No: Does not show significant changes going forward

Town of Vinton

RVARC staff reviewed Vinton’s zoning revisions framework, urban development areas, and a corridor study. Reviewing ordinances when updated and the Route 24 Bike/Pedestrian Study when completed are future tasks.

Table 8. Land use policies, practices, recommendations, and actions from plans and studies that affect transportation

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
Conduct an access management study to identify specific opportunities to consolidate and reduce accesses, considering	Gus Nicks Boulevard/Washington Avenue Corridor Improvement Study (p 22)	Yes

The land use policy, practice, recommendation, or action that affects transportation	Source	Promotes desired land uses
easement agreements, zoning opportunities, redevelopment opportunities, and trade-offs.		
Develop a Specific Plan that establishes the “Heart of the Downtown”.	Urban Development Areas (Recommendation 1A)	Yes
Develop a Downtown Streetscape Manual.	Urban Development Areas (Recommendation 1B)	Yes
Develop a Streetscape Plan for Washington Avenue, from Gus Nicks Blvd to Wolf Creek Greenway.	Urban Development Areas (Recommendation 1C)	Yes
Develop a Downtown Parking Plan.	Urban Development Areas (Recommendation 1L)	Yes
Add Accessory Dwelling Units as a Special Use	Vinton Zoning Revisions Framework	Yes, spreads out density increases
Add provisions in the GB District that large retail uses (over 30,000 s.f.) would require a Special Use Permit.	Vinton Zoning Revisions Framework	Possibly, the additional layer of review is an opportunity to promote desired land uses
Remove provisions for parking and driving aisles and replace them with more comprehensive parking location and screening standards.	Vinton Zoning Revisions Framework	Yes, reducing the number of accesses reduces congestion
Section 5-30, that deals with Off-Street Parking should be selectively revised to modernize and update the parking standards. Outdated ways of calculating parking by number of employees or number of seats, for example, should be replaced by more universal parking requirements by square footage. These standards have been modified in the chart below. In addition, a maximum parking standard has been added for some uses.	Vinton Zoning Revisions Framework	Yes, right-sizing parking can reduce congestion